DOCUMENT RESUME

ED 155 848 EC 110 629

AUTHOR Reid, D. Kim
TITLE Toward an Application of Developmental Epistemology to the Education of Exceptional Children.
PUB DATE 78
NOTE 10p.; To be published in the Annual Proceedings of the conference on Piagetian Theory and the Helping Professions (8th, Los Angeles, California, February, 1978)

EDRS PRICE MF-$0.83 HC-$1.67 Plus Postage.
DESCRIPTORS *Developmental Psychology; Educational Philosophy; Elementary Secondary Education; *Handicapped Children; *Learning Processes; *Special Education; *Theories
IDENTIFIERS *Piaget (Jean)

ABSTRACT

J. Piaget's theory of develcpmental epistemology; is used to raise questions about the conduct of special educatcn, particularly in four areas: the predcminant view of the nature of learning in handicapped children, emphasis cn perceptual aspects in instruction, attempts to reduce or eliminate errors in the responses of handicapped learners, and the use of carefully controlled teaching sequences to impose structure. The notion that handicapped children learn in a fundamentally different way frcm normal children is challenged, and it is suggested that emphasizing empirical rather than reflexive abstraction often leads to misunderstanding and forgetting. Error is explained to be an integral part of the learning process. The fallacy of imposing structure externally rather than assisting the handicapped in developing their own organizational schemes is explored. (Author/CL)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

ED155848

TOWARD AN APPLICATION OF DEVELOPMENTAL EPISTEMOLOGY TO THE EDUCATION OF EXCEPTIONAL CHILDREN

D. Kim Reid, Ph.D.
Department of Educational Psychology
933 Shimkin Hall
New York University

Piaget's theory of developmental epistemology was used to raise questions about the conduct of special education. Four areas of concern were examined: the predominant view of the nature of learning in handicapped children, emphasis on perceptual aspect in instruction, attempts to reduce or eliminate errors in the responses of handicapped learners, and the use of carefully controlled teaching sequences to impose structure. The notion that handicapped children learn in some way which differs fundamentally from that of normals was challenged. It was suggested that emphasis on empirical rather than reflexive abstraction often leads to misunderstanding and forgetting. Error was shown to be an integral part of the learning process. Finally, the fallacy of imposing structure externally rather than assisting the handicapped in developing their own organizational schemes was explored.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
D. Kim Reid
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC) AND USERS OF THE ERIC SYSTEM."

EC 110629

To be published in the 8th Annual Proceedings of the conference on Piagetian Theory and the Helping Professions, Los Angeles, California, February, 1978.

TOWARD AN APPLICATION OF DEVELOPMENTAL EPISTEMOLOGY TO THE EDUCATION OF EXCEPTIONAL CHILDREN

D. Kim Reid
New York University

Piaget's theory of developmental epistemology, which has often been used to challenge practices in regular education, raises serious questions about the conduct of special education as well. Four areas of concern will be examined in this paper: the predominant view of the nature of learning in handicapped children, emphasis on empirical abstractions in instruction, attempts to reduce or eliminate errors in the responses of handicapped children, and finally, belief that carefully controlled sequences of teaching and learning are the most effective means of providing structure.

Many special educators believe that handicapped children have need of "special" education, because they learn in some way which differs fundamentally from the process of learning engaged in by normal children. Some, for example, argue that while normals are easily capable of conceptualization, that is, going beyond the information given (in the Brunnerian sense) or drawing inferences, many handicapped children learn through a series of associations (cf. Blount, 1968). Genevan-based research with special populations, with its emphasis on an equilibration model, has asked the question <u>how</u> these children learn, rather than what they know, as American researchers even within the Piagetian tradition have done. Their findings indicate that the mentally retarded progress slowly, but normally, even though their behavior is characterized by rigidity and oscillations in levels of reasoning. The cerebral palsied, deaf, and blind also appear to progress through the stages of cognitive development normally and with only minimal delay. Neurotic children progress normally, but their reasoning vascillates between higher and lower levels. The learning disabled appear to have difficulty with representational or figurative functions, but subordinate them to operative reasoning once

EC 110629

the operations are constructed. Even the gifted who were once thought to be able to race through the developmental stages, are not capable of doing so. They do, however, perform stage-appropriate tasks in a manner far superior to their average-IQ peers. Only psychotic children appear to deviate from the normal developmental pattern described by Piaget. Only the psychotic fail to employ the same regulatory mechanisms in learning and development as normals. (For a more thorough review of this research see Reid, in press.) What, however, constitutes the processes of learning and development in the Piagetian view?

Piaget distinguishes between learning in its strict sense and learning in its broad sense (1959). Learning in the strict sense refers to gaining knowledge from the environment. It is both provoked and limited by the child's developmental level. Learning in the broad sense, however, which is of interest here, refers both to learning in its strict sense and the process of equilibration. Learning in the broad sense, therefore, embraces all of development (Inhelder, Sinclair, and Bovet, 1974) and results from the interaction of maturation, physical experience, social-cultural experience, and equilibration or self-regulation (Piaget, 1971). This process of learning entails, first, the application of an assimilative scheme which is in some way inadequate or inappropriate to the task at hand. If the child has the level of competence to recognize the inadequacy of the scheme, he or she experiences a sense of discomfort, disturbance, or contradiction, which in turn leads to an attempt to nullify or compensate for the disturbance. Efforts at compensation most often modify the original assimilative scheme. This recurring process of attempted assimilation, followed by a sense of disturbance, and the resultant efforts at compensation leads to ever richer and heightening (in the sense that they provide the child with an ever increasing number of possibilities for responding) levels of equilibrium (Piaget, 1977; in press). Evidence from the Genevan-based studies suggests that exceptional children (except psychotics) do not deviate from this process. These findings plus evidence from the efficacy studies published within the special education

literature itself (which demonstrated that handicapped children who did not receive special education services often did better in academic achievement than their counterparts in segregated classes) deny the assumption that the handicapped learn best through associations typically fostered by repeated exercise and drill. (Perhaps exercise is useful only after something has been learned!) Still, the majority of special education classes and programs are based on just such a premise (Blatt and Garfunkel, 1973).

One very serious error in this kind of approach, according to the Piagetian view, is that it emphasizes the perceptual aspects of objects and ideas. It focuses children's attention on affirmations, the present, positive characteristics of objects , such as their color or weight. Many of the characteristics of prelogical thought arise from just such an emphasis (Piaget, 1977). It is only when the child is able to construct negations (nonobservable properties such as the nonsquareness of a red triangle) that his or her thought processes transcend one-way mappings and simple correspondences and permit the internalized reversibility of thought necessary to operational reasoning. Piaget (in press) has explained that there is always an interplay between empirical and reflexive abstraction.[1] In other words, what children actually observe in the empirical world is guided by their theories of what they should be seeing (Inhelder and Karmiloff-Smith, 1976). Piaget has written of many, often charming, examples of children's subjective interpretations of empirical phenomena. Recall, for example, the child who sees the moon following him home at night or the little girl who insists that there are more lollipops than pieces of candy in a collection of lollipops and gum drops. Repeated observation of the moon or drill and practice in classifying would lead only to a confirmation for these children that they were correct in the judgments. Telling them that they were wrong might serve only to erode their confidence, because they simply would not as yet have developed the capacity to comprehend (Kamii and De Vries, in press).

This objection to emphasis on the perceptual data in special education leads

to another which is closely related, that is, the preoccupation with the elimination of error. It has long been argued that the best teaching, particularly for handicapped children, is that which occurs in sufficiently small increments that children are guided from correct response to correct response. This strategy appears inefficient in three respects. First, as suggested above, children often do not have the level of sophistocation to comprehend what it is they are supposed to be learning. Having no understanding places the child in the position of either deforming the information to fit his own theories or forces him or her to acquire those responses through rote memorization. We need only recall the widespread fear of so many teachers that the children in their classes will forget how to read or calculate over the summer months to see the folly of such an approach. Far too often, emphasis on performance and the accomplishment of a series of behavioral objectives diverts our attention from the bigger issue of the child's competence and lulls us into satisfaction with discrete performances which approximate the substance of our lessons, but are all too easily forgotten when the test is over.

Second, since learning occurs through attempts to compensate for disturbances or contradictions when inadequate assimilative schemes are applied, errors are indeed the very source of growth! Certainly no one would argue that error is important to a child's learning his or her address or the names of flowers, but logicomathematical knowledge undergoes a series of revisions throughout development (Piaget, 1977) and in that acquisition error plays a major role. As was noted earlier, errors do not arise from the child's inaccurate perception of empirical phenomena, but rather from his or her lack of a suitable framework to incorporate or organize the perceived information. This lack of structure, however, is not the result of stupidity or thoughtlessness (Ditisheim, 1974-75). It is instead a reflection of an incomplete evolution to adult thought and provides convincing evidence that children really do <u>construct</u> their own views of the world.

Finally, because error is characteristic of an incomplete process of cognitive

evolution, it provides parents, teachers, psychologists, and others who observe children with an index to their level of development. Unfortunately, this knowledge has often lead to the assumption that teaching children the skills associated with the next higher level of reasoning might be a suitable method for hurrying the developmental process. Such an attitude fails to respect the necessity for error in the construction of a view of reality and fails to appreciate the nature of the development of the particular behaviors which indicate passage to the next higher stage. Correct performance on a test of conservation, for example, heralds the onset of the period of concrete operations. By drilling children on conservation tests, we are able to secure correct responses to the task. Does that mean then that the child conserves? What has been forgotten is that we cannot so easily teach the logic which would enable the child to understand his response. In addition, one must guard against expecting children to perform consistently across a variety of tasks at one developmental level. Piaget's (1971) discussion of time lags (often called décalages) has all too often fallen on unhearing ears. Children who conserve number or substance, for example, are frequently unable to apply the exact same conservation scheme to weight or volume, until they are several years older. Why then should we expect a child who can conserve number or substance to operate at the level of concrete operations in all areas of performance associated with school learning? What is helpful about having some indication of children's levels of functioning is that we can gain some insight into the processes and mechanisms they have at their disposal to organize and assimilate new knowledge.

Finally, special educators often argue that it is perfectly efficient to allow bright children or, under certain circumstances, those with normal intellectual capacity to follow their own bent or use their own resources in learning. Special children, however, are regarded as needing "structure". This presumed need for structure most often results in the use of carefully

sequenced, often programmed, lessons in teaching the handicapped. Oftentimes these children are the least capable of following a rigid sequence or style which may not approximate their own. In addition, to attempt to supplant their lack of inner structure with one which is externally imposed, is to avoid the issue altogether. Where internal structuration is lacking, children who are not helped to achieve better organizational strategies are at the mercy of their parents and teachers on whom they must rely to organize their thinking and activities for them. The notion that they are incapable of structuring spontaneously is belied by the fact that they achieve cognitive milestones and pass through the stages of development just as the rest of us do, i.e., without specific instruction ! That they may do so somewhat more slowly than their normal peers becomes almost inconsequential when one considers the difficulties for which many of them must compensate.

The role of the teacher, therefore, becomes one in which opportunities are arranged for children to learn to structure their theories and activities for themselves. If teachers have some understanding of the child's mode of functioning, they can begin to assist the child in determining which of his ideas and theories can be tested. The teacher can then encourage the child to experiment and to reflect on the outcomes. Cooperation and discussions with the children's peers can help them to broaden their perspectives and to begin to ask themselves new questions. Of course, the teacher has the responsibility for provocation and guidance too, but in the form of questions which can lead the child to do his own thinking, rather than in the form of answers which cast the child into the role of passive respondent. Passivity can lead only to increased passivity (Piaget, 1974).

In conclusion, four areas of concern with the manner in which the education of exceptional children is both conceived and conducted have been addressed. First, the notion that special children learn in a way which differs

fundamentally from the processes of learning of normal children has been challenged. Secondly, it has been suggested that emphasis on empirical rather than reflexive abstraction often leads to misunderstanding and forgetting. Thirdly, it was shown that error is an integral part of the learning process. Finally, the fallacy of imposing structure rather than assisting handicapped children in developing their own organizational schemes was explored. In short, we must strive to "lead the child to construct for himself the tools that will transform him from the inside--that is, in a real sense and not only on the surface" (Piaget, 1974b, p. 121).

Footnote

1. The process of empirical abstraction refers to the observation of affirmations, that is, learning which is directly abstracted from the environment. Reflexive abstraction, on the other hand, includes first the projection of what is taken from a lower plane (eg. a motor act) onto a higher plane (eg., thought) and the drawing of inferences (Piaget, 1976).

References

Blatt, B., & Garfunkel, F. Teaching the mentally retarded. In R. M. W. Travers (Ed.), Second handbook of research on teaching: A project of AERA. Chicago: Rand McNally, 1973.

Blount, W. R. Concept usage in the mentally retarded. Psychological Bulletin, 1968, 69, 281-294.

Ditisheim, M. Quelques réflexions psychopédagogiques sur la valeur de l'erreur. Unpublished paper, University of Geneva, 1974-75.

Inhelder, B., & Karmiloff-Smith, A. If you want to get ahead get a theory. Cognition, 1976, 3, 195-212.

Inhelder, B., Sinclair, H,, & Bovet, M. Learning and the development of cognition. Cambridge, Mass.: Harvard University Press, 1974.

Kamii, C., & DeVries, R. Piaget for early education. In M. C. Day and R. K. Parker (Eds.), The preschool in action (Second edition). Boston: Allyn & Bacon, in press.

Piaget, J. Apprentissage et connaissance (première partie). In P. Greco and J. Piaget (Eds.) Etudes d'epistemologie genetique. Vol. 7. Apprentissage et connaissance. Paris: Presses Universitaires de France, 1959, pp. 21-67.

Piaget, J. Problems of equilibration. In C. F. Nodine, J. M. Gallagher, & R. H. Humphreys (Eds.), Piaget and Inhelder: On equilibration. Phila., Pa.: The Jean Piaget Society, 1971.

Piaget, J. Forward. In B. Inhelder, H. Sinclair, & M. Bovet Learning and the development of cognition. Cambridge, Mass.: Harvard University Press, 1974. (a)

Piaget, J. To understand is to invent: The future of education. New York: Viking Press, 1974. (b)

Piaget, J. The grasp of consciousness. Cambridge, Mass.: Harvard University Press, 1976.

Piaget, J. The development of thinking: The equilibration of cognitive structures. New York: Viking Press, 1977.

Piaget, J. Reflexive abstraction. Paris: Presses Universitaires de France, in press.

Reid, D. K. Genevan theory and the education of exceptional children. In J. M. Gallagher and J. Easley (Eds). Knowledge and development (Volume II): Piaget and education. New York: Plenum, in press.